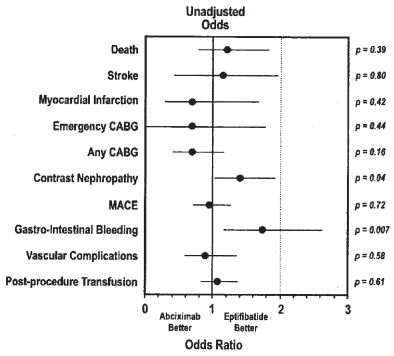
Inside This Issue of JACC

FEBRUARY 5, 2008, VOLUME 51, NO. 5



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Interventional Cardiology

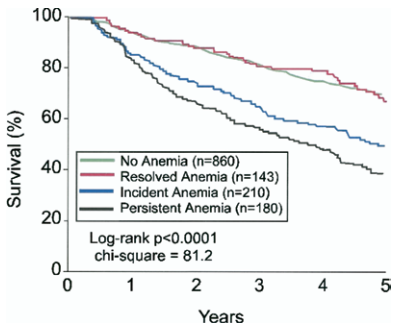
Registry Data Suggest No Difference Between Eptifibatide and Abciximab for Primary PCI

Strong clinical trial results exist suggesting that abciximab improves outcomes in primary percutaneous coronary intervention (PCI) for acute ST-segment elevation myocardial infarction. Eptifibatide has less evidence for this indication. Gurm and colleagues studied the use of these 2 agents for patients undergoing primary PCI in a registry of over 3,000 patients. Eptifibatide was used nearly 4 times more often than abciximab; there were no differences in the incidence of in-hospital death, recurrent myocardial infarction, stroke/transient ischemic attack, or the need for blood transfusion. These results suggest that eptifibatide, used as the adjunct antiplatelet agent in the majority of patients undergoing primary PCI, appears to be as safe and efficacious as abciximab. **See page 529. See figure.**

Myocardial Infarction

Newer Methods to Measure No-Reflow

Assessment of the no-reflow phenomenon after successful primary percutaneous coronary intervention (PCI) traditionally relies on subjective measures such as Thrombolysis In Myocardial Infarction flow and myocardial blush grade. Fearon and colleagues used a pressure/themistor wire placed distally in the culprit vessel after PCI to measure pressure and flow, which was then used to calculate resistance in the microcirculation. The calculated resistance correlated more strongly with echocardiographic wall motion score than other measurements of no-reflow. The AMICI (Acute Myocardial Infarction Contrast Imaging) trial studied myocardial contrast echocardiography within one day of primary PCI. Myocardial contrast echocardiography was superior to other measurements of no-reflow in predicting which patients would develop ventricular dilation. A commentary by Grayburn and Choi notes that while these 2 techniques can accurately assess myocardial perfusion, there is little known about how to treat or prevent the no-reflow problem. **See pages 552, 560, and 566.**



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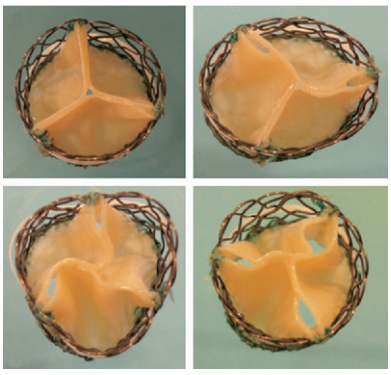
Heart Failure

Persistent Anemia Is a Significant Risk Factor for Patients With CHF

Although anemia is known to portend a poor outcome in patients with chronic heart failure (CHF), most of these data consist of a single assessment of hemoglobin (Hb) levels. Tang and colleagues used the electronic medical record of their institution to identify several aspects of anemia in patients with CHF. The prevalence of anemia (Hb $<$12 g/dl for men, $<$11 g/dl for women) was 17%, but only 3% of these patients had a documented work-up for the etiology. At 6-month follow-up, 20% of patients without prior anemia developed new-onset anemia, whereas 43% patients with anemia had since normalized. Patients with persistent anemia were at increased risk of death, but not those whose anemia resolved. The authors conclude that anemia is under-recognized and under-evaluated, and that chronic anemia portends poor outcomes. **See page 569. See figure.**



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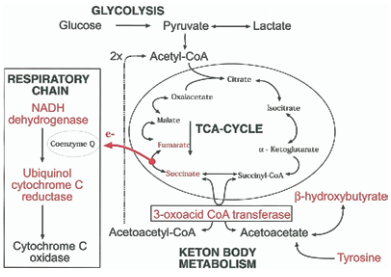

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Valvular Heart Disease

Native Valve Characteristics Can Damage Percutaneously Placed Valves

Percutaneous procedures may reduce the morbidity of aortic valve replacement (AVR), but which stenotic valves are suitable for placement of endovascular stented valves is not clear. Zegdi and colleagues studied 35 patients undergoing surgical AVR; after the aorta was opened and cardioplegia obtained, a stented valve was implanted, visually assessed, and then removed. The subjects then underwent standard AVR. In patients with stenotic but tricuspid aortic valves, the shape of stent deployment was triangular or elliptical in 32% of subjects. For subjects with bicuspid valves, 79% of the removed valves were elliptical. These altered shapes resulted in areas for perivalvular leaks and would likely lead to reduced valve performance over time. This study suggests that characteristics of the native valve need to be considered when deploying endovascular valve stents inside of them. **See page 579. See figure.**

Heart Rhythm Disorders

Altered Atrial Energy Metabolism Predicts Post-Operative AF

Sustaining atrial fibrillation (AF) seems to require high energy utilization for cellular metabolism. Mayr and colleagues studied this by collecting atrial tissue samples from patients undergoing cardiac surgery and then performing a combined metabolomic and proteomic analysis. Patients in persistent AF had increased beta-hydroxybutyrate and increased production of key enzymes necessary for ketolytic energy production, suggesting that these atria are metabolizing amino acids to augment the production of adenosine triphosphate. A low glucose to acetate ratio was found in patients who developed post-operative AF. Atrial fibrillation is associated with changes in atrial energy metabolism; whether these changes are the inciting factor or reflect a damaged atria that is more likely to develop AF remains unknown. **See page 585. See figure.**